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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/682,423 | 10/10/2003 | Jong-Min Wang | Q77871 | 9619 |
| 23373 | 7590 | 12/01/2004 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | KIM, RICHARD H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2871 | |

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/682,423

Applicant(s)

WANG, JONG-MIN

Examiner

Richard H Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 5,245,451) in view of Son et al. (US 6,545,738 B2), Johnson et al. (US 5,073,010) and Tanada et al. (US 6,671,015 B2).

Wu et al. discloses a method of driving a reflective type liquid crystal display having a polarization beam splitter (1), a display panel in which a liquid crystal (16) is filled between first electrode layers, disposed to be opposite to each other (28, 32), a compensation panel (4) in which liquid crystal is filled between second electrode layer, disposed opposite to each other (28', 32'), and the first and second electrode, comprising the steps of: applying an AC potential to the second electrode layer of the compensation panel; and applying an AC potential to the first electrode layer of the display panel (col. 4, lines 34-39). However, the reference does not disclose that half-V type ferroelectric liquid crystal is used.

Son et al. discloses utilizing a half-V type ferroelectric liquid crystal in a liquid crystal cell (col. 1, lines 40-44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a half-V type ferroelectric liquid crystal in the

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compensation panel and the display panel since one would be motivated to enhance a contrast ratio and enables the liquid crystal to be easily driven (col. 1, lines 43-44).

Furthermore the reference does not apply an AC potential corresponding to a gray scale of display data.

Johnson et al. discloses applying an AC potential corresponding to a gray scale of display data (col. 3, lines 45-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply an AC potential corresponding to a gray scale of display data since one would be motivated to create a linear gray level operation (col. 4, lines 57-59).

Moreover, the reference does not disclose that the electrodes are orthogonal to each other.

Tanada et al. discloses electrodes disposed orthogonal to each other (col. 7, lines 27-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the electrodes to be disposed orthogonal to each other since one would be motivated to enable a passive matrix type liquid crystal (col. 6, line 39).

Allowable Subject Matter

3. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination fails to teach the method wherein an AC potential, by which an included angle between an axis of the liquid crystal of the compensation panel and an axis of the liquid crystal of the display panel in a case that a potential is not applied to the display panel is varied within a range of 67.50-900, is applied to the second electrode layers of the compensation panel.

Response to Arguments

5. Applicant's arguments filed 11/17/04 have been fully considered but they are not persuasive.

6. In response to Applicant's argument while Johnson et al. discloses an AC source and use of the AC source with a "light sensitive" device, Johnson et al. does not disclose a corresponding compensation panel of application of AC potential to a compensation panel, Examiner submits that the light modulator disclosed by Johnson can be used as a compensator. Compensators as well known in the art, modulate light.

7. In response to applicant's argument that the present invention does not even mention the disadvantage that only a maximum average transmittance of 50% is obtained during the displaying period when a conventional liquid crystal display is drive by the use of AC, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

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8. In response to Applicant's argument that the prior art must also suggest the desirability of making a combination of modification, it is further stated in Johnson et al. that using an AC potential inhibits charge build-up (col. 4, lines 3-4).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim
Examiner
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RHK



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER